

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.(original) A process for the production of a coating composition which comprises the steps of:

(a) oxidising a mixture which comprises at least one plant protein and starch, in water at an alkaline pH; and

(b) heating the mixture concomitantly with oxidation or subsequent to oxidation to provide a composition with a viscosity from 1 to 100 centapoise, and a pH from pH 7.5 to pH 9.

2.(original): A process of claim 1 wherein the mixture has a solids content from 3% to 50%.

3.(currently amended): A process of claim 1 or 2 wherein the heating is performed at from 70°C to 150°C.

4.(original): A process for the production of a coating composition which comprises the steps of forming a mixture of a plant protein and plant starch in water at a solids content from 3% to 50%, oxidising the mixture with an oxidising agent at alkaline pH and heating the oxidised mixture at a temperature from 70°C to 150°C until the viscosity is lowered to 1 to 100 centapoise.

5.(currently amended): A process of claims 1 to 4 wherein the alkaline pH of step (a) is from 8 to 13.

6.(original): A process of claim 5 wherein the alkaline pH of step (a) is from 9 to 12.

7.(currently amended): The process of claims 1 to 6 wherein said protein is a plant protein selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

8.(currently amended): The process of claim 1 to 6 wherein said protein is a mixture of two or more different plant proteins selected from the group consisting of wheat, rye, triticale, maize, oats, and barley proteins.

9.(currently amended): The process of claims 1 to 8 wherein said starch is a plant starch selected from the group consisting of wheat, rye, sorghum, triticale, maize, oats, barley, tapioca, potato, sago and rice starch.

10.(currently amended): The process of claims 1 to 9 wherein said starch is selected from waxy starch and high amylose starch.

11.(currently amended): The process of claims 1 to 10 wherein said starch and protein mixture comprises from 4% w/w to 50% w/w plant protein.

12. (currently amended): The process of claims 1 to 11 wherein said starch/protein mixture is selected from the group consisting of flour, meal, grits and milled or crushed cereal grains.

13.(original): The process of claim 12 wherein the mixture is a flour is selected from the group consisting of wheat flour, rye flour, triticale flour, maize flour, oat flour and barley flour.

14.(original): The process of claim 13 wherein said flour has a protein content between 2% and 20%.

15.(currently amended): The process of claims 1 to 14 wherein an additional plant protein is added to the flour to increase protein level.

16.(original): The process of claim 15 wherein said additional plant protein is from the same grain from which the flour was produced, or is a plant protein from another plant species.

17.(currently amended): The process of claim 1 to 16 wherein the starch and protein mixture comprises a solids content from 3% w/w to 50% w/w.

18.(currently amended): The process of claims 1 to 17 wherein said oxidation is conducted at a temperature from 25°C to 50°C for 5 to 30 minutes prior to subsequent heating for 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 centapoise.

19.(currently amended): The process of claims 1 to 18 wherein said composition is dried in a dryer to a flowable particulate state.

20.(currently amended): The process of claims 1 to 19 wherein the oxidation and heating are conducted at the same time.

21.(currently amended): A composition for coating paper obtainable by a process as defined in ~~any one of~~ claims 1 to 20.

22.(original): A process for coating paper comprising the step of applying a composition as defined in claim 21 to paper.

23.(currently amended): A process for coating paper which comprises the steps:

(a) preparing a composition for coating by a process as defined in ~~any one of~~ claims 1 to 20; and

(b) applying the composition to paper.

24.(original): A product obtainable by the process defined in claim 23.

25.(original): A paper coated with an aqueous coating composition which comprises an alkali oxidised gelatinised starch/protein mixture, said composition having a viscosity from 1 to 100 centapoise, and a pH between pH 7.5 and pH 9.

26.(original): An aqueous composition for coating paper or paper board which comprises an alkali oxidised gelatinised starch and protein mixture, said composition having a viscosity from 1 to 100 centapoise (cps), and a pH from pH 7.5 to pH 9.

27.(original): A composition of claim 26 wherein the viscosity is from 5 to 80 centapoise.

28.(original): A composition of claim 27, wherein the viscosity is from 5 to 60 centapoise.

29.(currently amended): A composition of claims 26 to 28 wherein the pH is from pH 7.8 to pH 8.8.

30.(currently amended): The composition of claim 26 to 29 wherein said protein is a plant protein selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

31.(currently amended): The composition of claim 26 to 29 wherein the protein is a mixture of two or more different plant proteins selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

32.(currently amended): The composition of claims 26 to 31 wherein said starch comprises a plant starch.

33.(currently amended): The composition of claims 26 to 32 wherein said starch is a plant starch selected from the group consisting of wheat, rye, sorghum, triticale, maize, oats, barley, tapioca, potato, sago and rice starch.

34.(currently amended): The composition of claims 26 to 33 wherein said starch is selected from waxy starch and high amylose starch.

35.(currently amended): The composition of claims 26 to 34 wherein said gelatinised starch and protein mixture comprises from 6% w/w to 50% w/w plant protein.

36.(currently amended): A composition of claim 35 wherein said gelatinised starch and protein mixture comprises from 8% w/w to 25% w/w.

37.(original): The composition of claims 26 to 36 wherein said starch and protein mixture is selected from the group consisting of flour, meal, grits and milled or crushed cereal grains.

38.(original): The composition of claim 37 wherein said cereal grains are selected from the group consisting of wheat, rye, triticale, maize, oat and barley grains.

39.(original): The composition of claim 37 wherein said flour has a protein content between 2% and 20% w/w.

40.(currently amended): The composition of claims 37 to ~~39~~ wherein an additional plant protein is added to the flour to increase protein level.

41.(original): The composition of claim 40 wherein said additional plant protein is from the same grain from which the flour was produced, or is a plant protein from another plant species.

42.(currently amended): The composition of claims 26 to ~~41~~ wherein said alkali oxidised aqueous gelatinised starch/protein mixture comprises a solids content of from 3% w/w to 50% w/w.

43.(currently amended): The composition of claims 26 to ~~42~~ wherein said alkali oxidised aqueous gelatinised starch/protein mixture is obtained by oxidising a plant starch and plant protein mixture with an oxidising agent under alkaline conditions and heating the oxidised mixture at a temperature from 70°C to 150°C until the viscosity is from 1 to 100 centapoise.

44.(original): The composition of claim 43 wherein oxidation is conducted at a temperature of 25°C to 50°C for 5 to 30 minutes prior to heating for 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 centapoise.

45.(currently amended): The composition of claims 43 or ~~44~~ wherein oxidation is carried out under conditions of heating for a period of 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 centapoise.

46.(original): The composition of claim 43 wherein oxidation and heating are conducted at the same time.

47.(currently amended): The composition of claims 26 to 46 which is dried in a dryer to a flowable particulate state.

48.(original): An aqueous coating composition which comprises a mixture of starch and plant protein in water having a solids content of 3% w/w to 30% w/w, a protein content of 4% w/w to 50% w/w, a viscosity of 1 to 100 centapoise, and a pH from pH 7.5 to pH 9, wherein the starch is gelatinised and both the starch and protein in the mixture are alkali oxidised at a pH from pH 8 to pH 13.

49.(currently amended): A process for coating paper which comprises the step of applying a composition as defined in any one of claims 26 to 48 to paper, paperboard or cardboard.

50.(original): A product obtainable by the process of claim 49.

51.(original): A fibreboard comprising an alkali oxidised and gelatinised starch/protein mixture incorporated within a fibreboard.

52.(original): The fibreboard according to claim 51, wherein said fibreboard is selected from the group consisting of plasterboard, composite board, and particleboard.

53.(original): A process for the production of fibreboard, which comprises forming a mixture of plant protein and plant starch in water, preferably having from 3-50% solids content, oxidising the mixture with an oxidising agent at alkali pH at 25°C to 50°C for 5-30 minutes or up to 24-48 hours, mixing the alkali oxidised mixture with the fibreboard constituents, followed by heating the resultant mixture which may be formed into sheets in an oven at a temperature of 50°C to 150°C for 20 to 150 minutes.

54.(original): The process of claim 48 wherein said fibreboard constituents are selected from the group consisting of gypsum, wood particles, and fibrous constituents.